

ORIGINAL RESEARCH

<https://dx.doi.org/10.14482/psdc.43.1.417.586>



Impact of the Work Context and the Principal's Leadership on Stress in Teachers*

Repercusión del contexto laboral y el liderazgo del director sobre el estrés en los docentes

WILLIAM CAETANO FERREIRA

Universidade Federal do Ceará (UFC) (Brazil)

<https://orcid.org/0000-0002-0134-0045>

Correspondence: ferreirawilliam677@gmail.com

ESTHELA SÁ CUNHA

Universidade Federal do Ceará (UFC) (Brazil)

<https://orcid.org/0000-0002-4822-0454>

QUITÉRIA ALVES MELO

Universidade Federal do Rio Grande do Norte (UFRN) (Brazil)

<https://orcid.org/0000-0002-2831-1631>

* This work was supported by the Fundação Cearense de Apoio ao Desenvolvimento Científico e Tecnológico (FUNCAP), under grant BP5-019700046.01.00/22; the Conselho Nacional de Desenvolvimento Científico e Tecnológico (CNPq), under grant 403787/2023-8; and the Lemann Center for Educational Leadership and Equity, as part of the 2022 Open Call for Applied Research.



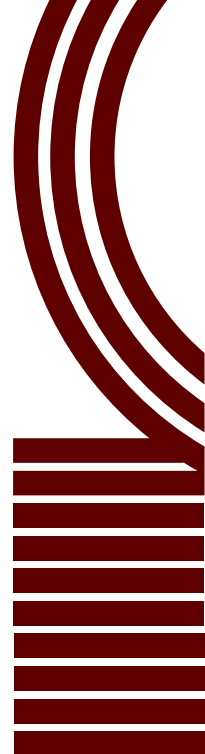
LORENA AÉLIO DE MELO
Universidade Federal do Ceará (UFC) (Brazil)
<https://orcid.org/0000-0002-6415-9024>

ANTONIA BEATRIZ TORRES VIANA
Universidade Federal do Ceará (UFC) (Brazil)
<https://orcid.org/0000-0003-3477-2677>

ALEX SANDRO DE MOURA GRANGEIRO
Universidade Federal do Ceará (UFC) (Brazil)
<https://orcid.org/0000-0001-7668-7978>

RENATA GUIMARÃES DE CARVALHO
Universidade Federal do Ceará (UFC) (Brazil)
<https://orcid.org/0000-0002-3592-7709>

FRANCISCO PABLO HUASCAR ARAGÃO PINHEIRO
Universidade Federal do Ceará (UFC) (Brazil)
<https://orcid.org/0000-0001-9289-845X>



Abstract

Stress is associated with increased absenteeism and reduced productivity among teachers. Previous studies regarding this professional group have reported stress prevalence rates ranging from 6.6% to 86%. Accordingly, this study aimed to examine the impact of the work context and school principals' leadership styles on stress levels among Brazilian basic education teachers. To this end, a total of 1,820 teachers from all regions of Brazil participated in the study. Data were collected using the Depression, Anxiety, and Stress Scale (DASS-21), the Hetero-Evaluation Scale of School Principal Leadership Styles, and the Teaching Work Context Assessment Scale (TWCAS), administered through a self-report questionnaire. Thereafter, multiple linear regression analyses were conducted using R and RStudio. The results showed that 30.4% of the teachers presented some level of stress. The significant predictors of stress were age, work organization, socio-professional relationships, and the Country Club leadership style.

Keywords: mental health, teaching work, working conditions, work organization, leadership.

Resumen

El estrés está asociado con un aumento en los índices de ausentismo y una baja productividad entre los profesores. En este grupo profesional, estudios han mostrado una prevalencia de estrés que varía entre el 6,6 y el 86 %. Ante esto, esta investigación se propuso investigar la influencia del contexto laboral y los estilos de liderazgo de los directores escolares en los niveles de estrés de los docentes de la educación básica en Brasil. Participaron en esta investigación 1820 profesores de todas las regiones de Brasil. Para la recolección de datos se utilizaron la Escala de Ansiedad, Depresión y Estrés, la Escala de Heteroevaluación de los Estilos de Liderazgo de los Directores Escolares y la Escala de Evaluación del Contexto Laboral Docente. Los datos fueron recolectados a través de un cuestionario autoaplicado. Se realizó una regresión lineal múltiple utilizando los programas R y RStudio. En la muestra, el 30,4 % de los docentes manifestaron algún nivel de estrés. Los predictores que mostraron asociaciones más claras con el estrés fueron edad, organización del trabajo y relaciones socioprofesionales.

Keywords: salud mental, trabajo docente, condiciones de trabajo, organización del trabajo, liderazgo.

Citation/Reference: Caetano Ferreira, W., Sá Cunha, E., Alves Melo, Q., Aélío de Melo, L., Torres Viana, A. B., De Moura Grangeiro, A. S., Guimarães de Carvalho, R., & Huascar Aragão Pinheiro, F. P. (2026). Impact of the Work Context and the Principal's Leadership on Stress in Teachers. *Psicología desde el Caribe*, 43(1), 66-85.

Introduction

Stress has been associated with increased absenteeism and reduced productivity among teachers (Oliveira & Cardoso, 2011). Moreover, these outcomes may also negatively affect student performance and, more broadly, the quality of educational processes (Garcés et al., 2019; Oliveira & Waldhelm, 2016).

Stress can be defined as a biological and psychological adaptation response activated when individuals are exposed to demands perceived as threatening, excessive, or difficult to manage. Although stress responses may have adaptive functions, persistent or intense stress may compromise functional adaptation and well-being. In work settings, stressors may include excessive workload, role ambiguity, adverse environmental conditions, interpersonal conflicts, and substantial changes in work routines (Conceição et al., 2019; Freitas et al., 2021; Santos & Santos, 2005).

International and Brazilian studies have reported stress prevalence rates among teachers ranging from 6.6% to 86% (Biernat et al., 2022; Freitas et al., 2021; Garnique-Hinostroza et al., 2022; Hadi et al., 2009; Hossain et al., 2022; Kovac et al., 2021; Lacomba-Trejo et al., 2022; Lizana & Lera, 2022; Othman & Sivasubramaniam, 2019; Ozamiz-Etxebarria et al., 2021; Raposo et al., 2022). Notably, these differences may reflect variations in study design, educational contexts, data collection procedures, and sample characteristics. Several studies have also indicated that female teachers (Antoniou et al., 2006; Bottiani et al., 2019; Desouky & Allam, 2017; Keim et al., 2022; Kovac et al., 2021; Othman & Sivasubramaniam, 2019; Tsubono & Ogawa, 2022; Zhao et al., 2021) and younger educators tend to report higher levels of stress (Antoniou et al., 2006; Hossain et al., 2022; Lizana & Lera, 2022).

Work Context, Leadership, and Stress

The present study draws on two complementary theoretical frameworks. First, to understand the teaching work context, we rely on the activity ergonomics perspective, particularly the notion of the “Context of Production of Goods and Services” proposed by Mendes and Ferreira (2008). Within this framework, work context is conceptualized as the material, organizational, and social setting in which work activity takes place and in which workers develop individual and collective strategies to deal with work demands. Second, to conceptualize school leadership, we use Blake and Mouton’s Managerial Grid theory, which classifies

leadership styles according to the combination of concern for people and concern for results (Blake & Mouton, 1989; Mourão et al., 2016).

From the activity ergonomics perspective, the teaching work context can be understood through three interdependent dimensions: work organization, working conditions, and socio-professional relationships. Work organization refers to the rules, demands, division of tasks, time constraints, performance expectations, and control mechanisms that structure work activity. Meanwhile, working conditions refer to the material, physical, and institutional resources available for carrying out work. Socio-professional relationships involve interactions with supervisors, colleagues, students, families, and other actors within the institutional environment (Mendes & Ferreira, 2008).

Previous research has shown that several aspects of the teaching work context are associated with stress. Regarding work organization, role ambiguity, insufficient information about teachers' responsibilities, long working hours, high workload, and work in more than one institution have been related to elevated stress indicators (Freitas et al., 2021; Hadi et al., 2009; Liu et al., 2021; Lizana & Lera, 2022; Mérida-López et al., 2017; Ssenyonga & Hecker, 2021). Concerning socio-professional relationships, conflicts with principals, coordinators, peers, and students have also been associated with teacher stress (Antoniou et al., 2006; Bottiani et al., 2019; Kovac et al., 2021; Mahan et al., 2010; Ouellette et al., 2018; Ravalier & Walsh, 2018; Tsubono & Ogawa, 2022). In addition, teachers who negatively evaluate school infrastructure and material resources are more likely to report higher stress levels (Herman et al., 2023; Oliveira & Cardoso, 2011; Ouellette et al., 2018).

In this regard, school leadership may also play an important role in teachers' mental health. Practices such as imposing excessive academic demands, engaging in constant supervision, and providing insufficient managerial support have been identified as stressors for teachers (Ghasemi et al., 2022; Herman et al., 2023; Ravalier & Walsh, 2018). Similarly, principals' limited ability to secure essential material resources for the school has been associated with teacher stress (Ouellette et al., 2018).

As previously noted, school leadership is conceptualized according to the Managerial Grid theory (Blake & Mouton, 1989). This framework identifies two central dimensions: concern for results, which refers to productivity, performance, and

goal achievement; and concern for people, which refers to the needs, expectations, participation, and well-being of subordinates (Mourão et al., 2016). The intersection of these two dimensions defines four leadership styles.

First, impoverished management reflects low concern for both people and results. In contrast, team management reflects high concern for both dimensions and emphasizes commitment, participation, and shared organizational goals. Meanwhile, Country Club management combines high concern for people with low concern for results, prioritizing interpersonal harmony and a comfortable organizational climate over task performance. Lastly, Authority-Compliance management combines high concern for results with low concern for people, emphasizing efficiency, control, and performance with limited attention to human needs (Blake & Mouton, 1989).

The Present Study

Although teacher stress has been widely investigated, important gaps remain in the Brazilian literature on basic education teachers. For instance, many national studies have focused on university faculty, used smaller or geographically restricted samples, or examined stress without simultaneously considering validated measures of both work context and school leadership (Freitas et al., 2021; Oliveira & Cardoso, 2011; Raposo et al., 2022). Thus, the originality of the present study lies not only in the size and regional diversity of the sample, but also in its integrated analytical approach. By combining a work context framework derived from activity ergonomics with a leadership model grounded in the Managerial Grid theory, this study examines how organizational, relational, material, and managerial dimensions are associated with teacher stress in Brazilian basic education.

This approach is relevant because teacher stress cannot be fully understood solely as an individual psychological outcome. Instead, it is also shaped by how work is organized, how institutional relationships are structured, and how school principals manage the balance between support and performance demands. In this regard, understanding these factors may help school administrators and policymakers design more effective strategies to promote teachers' mental health, reduce absenteeism and sick leave, and improve the quality of educational work.

Therefore, the central objective of this study is to analyze the impact of work context and school principals' leadership styles on teacher stress. Specifically,

the study seeks to: (a) identify the prevalence of stress in a sample of Brazilian basic education teachers; (b) examine the association between the dimensions of the teaching work context, namely work organization, working conditions, and socio-professional relationships, and stress; and (c) assess the predictive role of school principals' leadership styles, based on concern for people and concern for results, in teachers' reported stress levels.

Furthermore, recognizing that demographic and occupational characteristics may influence mental health outcomes, we included age, gender, and educational level were included as control variables in the analytical model. This strategy facilitated the examination of the specific contribution of organizational and managerial variables while accounting for relevant individual and occupational characteristics. In light of these objectives, the study tested the following hypotheses:

- H1: Less favorable perceptions of the teaching work context, particularly regarding work organization and socio-professional relationships, will be associated with higher levels of teacher stress.
- H2: Teachers who perceive their school principals as adopting a Team leadership style, characterized by high concern for both people and results, will report lower stress levels than those who perceive other leadership styles.

Method

Participants

Our non-probability sample consisted of 1,820 teachers from across Brazil. Eligibility criteria required participants to be teaching in Brazilian basic education, including early childhood education, elementary education, high school, youth and adult education, or specialized educational assistance, and to have been actively teaching in the classroom for at least four months before the study.

Most participants worked in the Northeast region of Brazil (64.9%), while 71.3% were women. The mean age was 42.68 years ($SD = 9.38$). Regarding race, mixed-race and Black participants accounted for 65.6% of the sample. Furthermore, with respect to marital status, the largest proportion of respondents reported being married (46.5%). In addition, the mean per capita family income was R\$ 2,502.02 ($SD = 3,786.04$). In terms of educational attainment, 63.4% held

a specialization degree. Finally, the largest group of participants reported teaching in the final years of elementary education (27.3%), and the mean length of teaching experience was 15 years (SD = 9.01).

Measures

We assessed three constructs: stress, school leadership, and the teachers' work context. Additionally, sociodemographic variables, such as gender, age, and educational level, were included in the analysis as control variables.

Stress. We measured stress using the DASS-21, a 4-point Likert-type scale ranging from 0 ("does not apply to me") to 3 ("applies very much to me, or most of the time"). The instrument consists of 21 items divided into three subscales that assess depression ($\alpha = 0.92$; e.g., "I felt that life was meaningless"), anxiety ($\alpha = 0.86$; e.g., "I felt scared without any good reason"), and stress ($\alpha = 0.90$; e.g., "I was intolerant of anything that kept me from getting on with what I was doing"). Respondents were instructed to consider the sensations they had experienced during the week before completing the scale. Several previous national (e.g., Deffaveri et al., 2020; Freitas et al., 2021) and international studies (e.g., Gawrych et al., 2022; Ghasemi, 2022) have used the instrument to assess these constructs.

In the present study, only the stress subscale was employed. The stress score was calculated by summing the items of the subscale and multiplying the result by two, following the scoring procedure proposed by Vignola and Tucci (2014). The cut-off points for stress are as follows: normal (0–14), mild (15–18), moderate (19–25), severe (26–33), and extremely severe (above 34). Internal consistency in the present study was satisfactory ($\alpha = 0.95$; $\omega = 0.96$). For the multiple linear regression analysis, the final stress score was treated as a continuous dependent variable in its original scoring metric. Therefore, no standardization or score harmonization with the other instruments was required.

School Leadership. To measure this variable, we used the Hetero-Evaluation Scale of School Principal Leadership Styles (HESPLS), consisting of 22 Likert-type items ranging from 1 (strongly disagree) to 9 (strongly agree). The scale has two factors: focus on people (e.g., "The principal gives teachers autonomy regarding tasks to be performed") and focus on results (e.g., "The principal emphasizes the importance of school results"). The instrument was developed for the present study and showed adequate fit indices (robust RMSEA = 0.07; CI: 0.05–0.06,

$p < .001$; SRMR = 0.03; robust CFI = 0.96; robust TLI = 0.96) and satisfactory internal consistency: focus on people ($\alpha = 0.98$; $\omega = 0.98$) and focus on results ($\alpha = 0.92$; $\omega = 0.92$).

The HESPLS allows for the classification of school principals' leadership styles based on the combination of the two-factor scores. Consequently, four leadership styles were identified: Impoverished (low focus on people and low focus on results), country club (high focus on people and low focus on results), Authority-Compliance (low focus on people and high focus on results), and Team (high focus on people and high focus on results). Moreover, the cut-off points for the focus on people and focus on results factors are 5.81 and 6.4, respectively.

Regarding the regression model, the HESPLS scores were not entered as continuous variables on their original 1-to-9 scale. Instead, the mean scores of the focus on people and focus on results factors were used to classify each respondent's perception of the principal's leadership into one of the four styles. This classification generated a single categorical predictor, which was included in the regression model using the Team leadership style as the reference category. Thus, differences in the original Likert scale range did not require mathematical homogenization, as the leadership measure was analyzed as a categorical variable rather than as a continuous score.

Work Context. To assess work context, we used the Teaching Work Context Assessment Scale (TWCAS), consisting of 31 Likert-type items ranging from 1 ("never") to 5 ("always"). The scale has three dimensions: socio-professional relationships (e.g., "Communication among teachers is satisfactory"), work organization (e.g., "Teachers have to follow strict rules imposed by the school"), and working conditions (e.g., "Classrooms are too small for the number of students"). Respondents were asked to answer the items according to their perception of the educational institution where they worked. In this regard, the TWCAS was developed for this study and showed satisfactory fit indices (scaled RMSEA = 0.074, 90% CI: 0.072–0.077, $p < .001$; SRMR = 0.069; scaled CFI = 0.902; scaled TLI = 0.895), as well as adequate internal consistency in each dimension: socio-professional relationships ($\alpha = 0.91$; $\omega = 0.92$), work organization ($\alpha = 0.80$; $\omega = 0.88$), and working conditions ($\alpha = 0.88$; $\omega = 0.88$).

Participants' scores for each TWCAS dimension were calculated by averaging the respective item scores. These mean scores were entered into the regression

model as continuous predictor variables, thereby preserving the original 1-to-5 metric of the instrument. Since linear regression allows the simultaneous inclusion of continuous predictors measured on different scales and categorical predictors represented by dummy variables, no prior standardization, rescaling, or homogenization of the instruments was necessary. Ultimately, the coefficients were interpreted according to the metric and operationalization of each variable.

Procedures

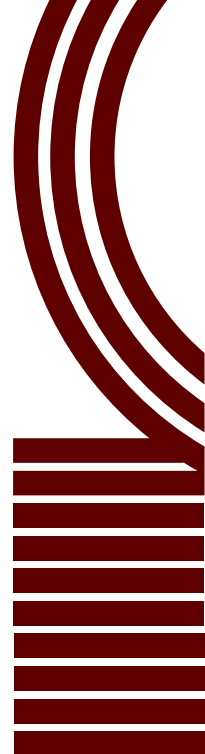
Data Collection. Data were collected through a self-administered online questionnaire between July and August 2023. Participants were first presented with the informed consent form, and only those who provided consent were able to proceed to the subsequent sections of the questionnaire.

Data Analysis. Analyses were conducted using R software, version 4.4.2. Multiple linear regression was used to examine the extent to which the work context, school principals' leadership styles, and sociodemographic variables were associated with teachers' stress levels. The following assumptions were tested: normality, homoscedasticity, and the independence of residuals, as well as non-zero variance, linearity, multicollinearity, and the absence of influential outliers. Potential outliers were then assessed using Cook's distance, with $4/n$ as the cut-off criterion.

Ethical Considerations. This study followed the guidelines and standards established by Resolutions 466/2012 and 510/2016 of the Brazilian National Health Council. The study was approved by the Ethics Committee of Vale do Acaraú State University (CAAE: 39276720.5.0000.5053). Informed consent was obtained from all participants.

Results

In our sample, 30.4% of teachers presented some level of stress. Additionally, ninety outliers were removed from the sample, corresponding to 4.95% of cases. All regression assumptions were met ($VIF < 2$; Durbin-Watson = 2.01, $p = .854$; $SD > 0$), except for normality (Shapiro-Wilk = 0.97, $p < .001$; Kolmogorov-Smirnov = 0.06, $p < .001$) and the homoscedasticity of the residuals (Breusch-Pagan test: $\chi^2 = 35.42$, $p < .001$). Therefore, multiple linear regression was conducted using bootstrapped estimates based on 5,000 resamples. The variables included in the regression model explained 17% of the variance in stress,



$F(12, 1711) = 29.38, p < .001, R^2 = 0.17, f^2 = 0.20$. Specifically, the significant predictors were work organization ($\beta = -0.28, p < .001$), socio-professional relationships ($\beta = -0.19, p < .001$), the Country Club leadership style ($\beta = -0.08, p < .001$), and age ($\beta = -0.09, p < .001$).

Younger teachers and those working in contexts with poorer indicators of work organization and socio-professional relationships reported higher stress levels. However, although age was statistically significant, its small effect size and a confidence interval close to zero suggest that its practical impact on stress may be limited. In addition, teachers whose principals were perceived as adopting a Country Club leadership style, characterized by a greater emphasis on interpersonal relationships and less emphasis on results, reported lower average stress levels than those whose principals were perceived as adopting a Team leadership style. These findings are presented in the following table.

Table. Linear Regression Results for Stress

Variable	B	SE	95% CI (5,000 resamples)		β	p
			LL	UL		
Intercept	15.96	0.85	14.20	17.71		.00
Sex	0.34	0.23	-0.10	0.79	0.04	.25
Age	-0.04	0.01	-0.06	-0.02	-0.09	.00
Early Years of Elementary Education	-0.15	0.33	-0.83	0.51	-0.01	.46
Final Years of Elementary Education	-0.41	0.35	-1.07	0.24	-0.04	.32
High School	0.44	0.42	-0.39	1.27	0.03	.36
Other Educational Levels	-0.42	0.31	-1.05	0.19	-0.04	.28
Work Organization	-1.54	0.15	-1.83	-1.25	-0.28	.00
Work Conditions	0.01	0.17	-0.31	0.34	0.00	.52
Socio-Professional Relationships	-1.14	0.17	-1.48	-0.81	-0.19	.00
Country Club Leadership	-1.58	0.43	-2.27	-0.87	-0.08	.00
Impoverished Leadership	-0.22	0.27	-0.74	0.34	-0.02	.40
Authority-Compliance Leadership	-0.03	0.39	-0.71	0.68	-0.00	.54

Note. $N = 1721$. SE = standard error. CI = confidence interval.

Source: own elaboration.

Discussion

Our study aimed to investigate the influence of work context and school principals' leadership styles on stress levels among Brazilian basic education teachers. The results showed that 30.4% of the participants presented some level of stress. This prevalence is lower than that reported in previous Brazilian studies

(Freitas et al., 2021; Raposo et al., 2022), although international studies have shown highly variable rates, ranging from 6.6% to 86% (Hossain et al., 2022; Lizana & Lera, 2022). However, direct comparisons should be made with caution, since these studies differ in data collection procedures, sample composition, regional scope, and educational contexts. These methodological and contextual differences may help explain the variability in prevalence rates.

Regarding the control variables, younger teachers reported higher stress levels. However, the effect size was small, thereby suggesting that age has limited practical relevance as an isolated predictor. This result is consistent with previous studies that also found higher stress levels among younger teachers (Antoniou et al., 2006; Hossain et al., 2022; Lizana & Lera, 2022). Nevertheless, the modest magnitude of this association indicates that organizational and relational aspects of the teaching work context may be more relevant to understanding stress levels in this sample.

With respect to gender, no significant differences were found in stress levels between male and female teachers. This outcome differs from several previous studies that reported higher stress levels among female teachers (Antoniou et al., 2006; Bottiani et al., 2019; Keim et al., 2022; Kovac et al., 2021; Othman & Sivasubramaniam, 2019; Tsubono & Ogawa, 2022; Zhao et al., 2021). In the present study, however, gender did not contribute significantly to explaining stress when work context and leadership variables were included in the model.

Educational level was also not significantly associated with teacher stress when compared to early childhood education, which served as the reference category in the model. This findings differs from those reported in international studies, in which elementary education teachers showed higher stress levels than teachers working at other educational levels (Desouky & Allam, 2017). In this regard, differences in school organization, teacher responsibilities, institutional demands, and sociocultural characteristics across educational systems may limit direct comparisons with the present findings.

Turning to the work context, more favorable evaluations of work organization and socio-professional relationships were associated with lower stress levels. Conversely, less favorable perceptions of these dimensions were related to higher stress levels. These findings partially support Hypothesis 1(H1), since two of the three work context dimensions were significantly associated with stress.

With respect to work organization, previous studies have shown that teachers exposed to long working hours, high workload, and work overload beyond classroom activities tend to report higher stress levels (Liu et al., 2021; Lizana & Lera, 2022; Ouellette et al., 2018; Tsubono & Ogawa, 2022). These findings are consistent with the present results, suggesting that how teaching work is structured, regulated, and distributed may be central to understanding stress among teachers.

In the Brazilian context, these findings may be interpreted in light of the longstanding devaluation of teaching work, which is expressed in work intensification, unstable employment conditions, increased administrative demands, and limited institutional resources (Oliveira, 2010; Pessanha & Trindade, 2022; Silva et al., 2019). These structural features may shape the way teachers experience work organization and help explain why this dimension was associated with stress in the present study.

Furthermore, socio-professional relationships were also significantly associated with stress. In this sense, teachers working in contexts marked by conflicts with peers or supervisors, communication difficulties, excessive performance demands, or competitiveness among colleagues tend to report higher stress levels (Tsubono & Ogawa, 2022). In addition, previous studies have shown that undesirable student behaviors and disruptions in classroom dynamics are related to increased teacher stress (Bottiani et al., 2019; Ouellette et al., 2018).

Unlike work organization and socio-professional relationships, working conditions were not significantly associated with stress. Therefore, H1 was only partially supported. In fact, this result differs from studies showing that teachers who perceive material and infrastructural conditions as precarious or insufficient tend to report higher stress levels (Herman et al., 2023; Ouellette et al., 2018; Oliveira & Cardoso, 2011). One possible interpretation is that, in this sample, relational and organizational aspects of work were more closely related to stress than material conditions.

Among the leadership styles analyzed, teachers who perceived their principals as adopting a Country Club leadership style—characterized by high concern for people and low concern for results—reported lower stress levels than those who perceived their principals as adopting a Team leadership style. Thus, Hypothesis 2 (H2) was rejected.

Although this result was contrary to our initial expectation, it may indicate that, in some school contexts, lower emphasis on formal performance demands is perceived by teachers as less stressful than leadership styles that combine interpersonal support with strong result-oriented expectations. Indeed, previous studies have shown that constant supervision, excessive demands, and invasive monitoring of teachers' activities are perceived as important stressors (Ghasemi et al., 2022; Herman et al., 2023; Ravalier & Walsh, 2018).

Conclusion

This study examined the influence of the work context and school principals' leadership styles on stress levels among Brazilian basic education teachers. The findings showed that 30.4% of the teachers presented some level of stress. Furthermore, among the variables analyzed, work organization, socio-professional relationships, age, and the Country Club leadership style were significantly associated with stress. More favorable perceptions of work organization and socio-professional relationships were related to lower stress levels, suggesting that the way teaching work is structured and the quality of interpersonal relationships within schools are central factors for understanding teachers' mental health. Although younger teachers reported higher stress levels, the effect size was small, thus indicating that age should be interpreted as a secondary factor when compared to the organizational and relational aspects of the work context.

The findings also showed that teachers who perceived their principals as adopting a Country Club leadership style reported lower stress levels than those who perceived a Team leadership style. Although this result was contrary to the initial hypothesis, it suggests that leadership practices perceived as less focused on formal performance demands may be experienced by teachers as less stressful. This finding does not imply that educational management should neglect institutional goals or student learning outcomes. Rather, it highlights the need to critically examine how result-oriented demands are communicated, monitored, and combined with interpersonal support in school settings.

From a practical perspective, these results may inform actions by school administrators and policymakers. Particularly, at the school management level, interventions should prioritize the review of work organization, including workload distribution, role clarity, the reduction of excessive bureaucratic demands, and the creation of institutional spaces for dialogue among teachers

and management teams. Likewise, improving socio-professional relationships should also be considered a strategic action, involving conflict mediation, the strengthening of collaborative practices, the improvement of internal communication, and the development of leadership practices that combine support, autonomy, and realistic expectations regarding results.

At the policy level, the findings reinforce the importance of treating teacher stress not only as an individual health issue, but also as an organizational and institutional matter. Accordingly, public policies aimed at teacher well-being should include the systematic monitoring of psychosocial risks in schools, training programs for school principals focused on people management and occupational health, and institutional guidelines for preventing work overload. Policies that promote adequate working conditions, stable professional trajectories, and support networks for teachers may contribute to reducing stress and improving the quality of work life in basic education.

In terms of limitations, this study has a few constraints. First, the sample was obtained through convenience sampling, which limits the generalization of the findings. In addition, the cross-sectional design prevents causal interpretations regarding the relationships among the work context, leadership styles, and stress. Finally, the use of remote data collection may also have introduced selection bias, since participation depended on access to digital resources and the willingness to answer an online questionnaire.

Despite these limitations, the study possesses notable strengths. Specifically, it included a large sample of teachers from all Brazilian regions and addressed an underexplored population in national research, since many previous studies have focused on university faculty or more geographically restricted samples. Another strength is the simultaneous analysis of work context, school leadership, and stress, which allows for a broader understanding of the organizational factors associated with teachers' mental health. Moreover, the use of instruments specifically developed for the teaching context contributes to the adequate measurement of the constructs analyzed.

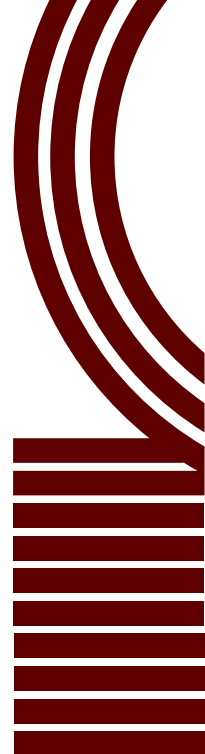
Moving forward, future studies should deepen the investigation of the mechanisms that explain stress among younger teachers, especially through qualitative designs capable of exploring professional trajectories, work expectations, institutional support, and early-career challenges. Similarly, longitudinal

studies are also recommended to examine how changes in work organization and leadership practices affect stress over time. In addition, future research may investigate subgroup differences according to gender, educational level, school type, region, and employment conditions, thereby providing a more detailed understanding of how organizational and sociodemographic factors interact in shaping teacher stress.

Overall, the present study contributes to the literature by showing that teacher stress is closely related to the organizational and relational dimensions of school work. Conclusively, its findings suggest that improving teachers' mental health requires actions that go beyond individual coping strategies, involving changes in school management practices, institutional support, and educational policies aimed at promoting healthier and more sustainable work environments.

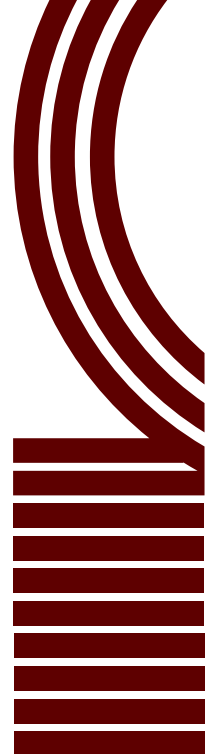
References

- Antoniou, A.-S., Polychroni, F., & Vlachakis, A.-N. (2006). Gender and age differences in occupational stress and professional burnout between primary and high-school teachers in Greece. *Journal of Managerial Psychology*, 21(7), 682-690. <https://doi.org/10.1108/02683940610690213>
- Biernat, E., Piątkowska, M., & Rozpara, M. (2022). Is the prevalence of low physical activity among teachers associated with depression, anxiety, and stress? *International Journal of Environmental Research and Public Health*, 19(14), 8868. <https://doi.org/10.3390/ijerph19148868>
- Blake, R. R., & Mouton, J. S. (1989). *O grid gerencial III: A chave para a liderança eficaz*. Livraria Pioneira Editora.
- Bottiani, J. H., Duran, C. A. K., Pas, E. T., & Bradshaw, C. P. (2019). Teacher stress and burnout in urban middle schools: Associations with job demands, resources, and effective classroom practices. *Journal of School Psychology*, 77, 36-51. <https://doi.org/10.1016/j.jsp.2019.10.002>
- Conceição, J. B. da., Bellinati, N. V. da C., & Agostinetti, L. (2019). Percepção de estresse fisiológico em professores da rede pública de educação municipal [Physiological stress perception in teachers of public network of municipal education]. *Psicologia, Saúde & Doenças*, 20(2), 452-462. <https://doi.org/10.15309/19psd200214>
- Cunha, E. S., Pinheiro, F. P. H. A., Melo, L. A., & Melo, Q. A. (2023). Escala de Avaliação do Contexto de Trabalho Docente: Construção e Validação [Teaching Work Context Assessment Scale: Construction and Validity]. [Manuscript submitted for publication]. Universidade Federal do Ceará.
- Deffaveri, M., Méa, C. P. D., & Ferreira, V. R. T. (2020). Sintomas de ansiedade e estresse em professores de educação básica [Symptoms of anxiety and stress in elementary school teachers]. *Cadernos de Pesquisa*, 50(177), 813-827. <https://doi.org/10.1590/198053146952>



- Desouky, D. , & Allam, H. (2017). Occupational stress, anxiety and depression among egyptian teachers. *Journal of Epidemiology and Global Health*, 7(3), 191-198. <https://doi.org/10.1016/j.jegh.2017.06.002>
- Freitas, R. F. , Ramos, D. S. , Freitas, T. F. , Souza, G. R. de , Pereira, É. J. , & Lessa, A. do C. (2021). Prevalência e fatores associados aos sintomas de depressão, ansiedade e estresse em professores universitários durante a pandemia da COVID-19 [Prevalence and factors associated with depression, anxiety, and stress symptoms among professors during COVID-19 pandemic]. *Jornal Brasileiro De Psiquiatria*, 70(4), 283-292. <https://doi.org/10.1590/0047-2085000000348>
- Garcés, D. E. , Telles, F. S. , Romero, M. A. R. , & Orozco, C. S. (2019). Efecto modulador del liderazgo transformacional en el estrés laboral y la efectividad escolar percibida por trabajadores de educación básica de Ciudad Guzmán, Jalisco [Modulating effect of transformational leadership on work-stress and school effectiveness perceived by basic education workers in Ciudad Guzmán, Jalisco]. *RIDE. Revista Iberoamericana Para La Investigación Y El Desarrollo Educativo*, 9(18), 845-867. <https://doi.org/10.23913/ride.v9i18.477>
- Garcia, M. M. A. , & Anadon, S. B. (2009). Reforma educacional, intensificação e autointensificação do trabalho docente [Educational reform, intensification of teacher's work and self-exploitation]. *Educação & Sociedade [online]*, 30(106), 63-85, 2009. <https://doi.org/10.1590/S0101-73302009000100004>
- Garnique-Hinostroza, R. , Ramírez, D. , Díaz, M. , Turpo, J. A. , Alvarado-Carbonel, M. , Cjuno, J. , & Hernández, R. M. (2022). Work environment, depression, anxiety and stress in teachers of the Peruvian jungle in the Covid-19 context. *Archivos Venezolanos de Farmacología y Terapéutica*, 41(5), 380-384. <https://doi.org/10.5281/zenodo.7135654>
- Gawrych, M. , Cichoń, E. , & Hintze, B. (2022). Predictors of teachers' mental health-implications for practice. *Advances in Psychiatry and Neurology*, 31(1), 15-24. <https://doi.org/10.5114/ppn.2022.115238>
- Ghasemi, F. (2022). (Dys)functional cognitive-behavioral coping strategies of teachers to cope with stress, anxiety, and depression. *Deviant Behavior*, 43(12), 1558-1571. <https://doi.org/10.1080/01639625.2021.2012729>
- Ghasemi, F. , Herman, K. C. , & Reinke, W. M. (2023). Shifts in stressors, internalizing symptoms, and coping mechanisms of teachers during the COVID-19 Pandemic. *School Mental Health*, 15(1), 272-286. <https://doi.org/10.1007/s12310-022-09549-8>
- Hadi, A. A. , Naing, N. N. , Daud, A. , Nordin, R. , & Sulong, M. R. (2009). Prevalence and factors associated with stress among secondary school teachers in Kota Bharu, Kelantan, Malaysia. *Southeast Asian Journal of Tropical Medicine and Public Health*, 40(6), 1359-1370. <https://www.tm.mahidol.ac.th/seameo/2009-40-6/26-4037.pdf>
- Herman, K. C. , Sebastian, J. , Eddy, C. L. , & Reinke, W. M. (2023). School leadership, climate, and professional isolation as predictors of special education teachers' stress and coping profiles. *Journal of Emotional and Behavioral Disorders*, 31(2), 120-131. <https://doi.org/10.1177/10634266221148974>

- Hossain, M. T. , Islam, M. A. , Jahan, N. , Nahar, M. T. , Sarker, M. J. A. , Rahman, M. M. , Deeba, F. , Hoque, K. E. , Aktar, R. , Islam, M. M. , Hossain, M. Z. , Siddiqua, L. , Mahbub, Z. , & Islam, M. N. (2022). Mental health status of teachers during the second wave of the COVID-19 pandemic: A web-based study in bangladesh. *Front. Psychiatry*, 13, 1-12. <https://doi.org/10.3389/fpsy.2022.938230>
- Keim, R. , Pfitscher, G. , Leitner, S. , Burger, K. , Giacomoni, F. , & Wiedermann, C. J. (2022). Teachers' emotional well-being during the SARS-CoV-2 pandemic with long school closures: A large-scale cross-sectional survey in Northern Italy. *Public Health*, 208, 1-8. <https://doi.org/10.1016/j.puhe.2022.04.006>
- Kovac, F. , Memisevic, H. , & Svraka, E. (2021). Mental health of teachers in Bosnia and Herzegovina in the time of COVID-19 pandemics. *Mater Sociomed*, 33(4), 257-261. <https://doi.org/10.5455/msm.2021.33.257-261>
- Lacomba-Trejo, L. , Schoeps, K. , Valero-Moreno, S. , Del Rosario, C. , & Montoya-Castilla, I. (2022). Teachers' response to stress, anxiety and depression during COVID-19 lockdown: What have we learned from the pandemic?. *Journal of School Health*, 92(9), 864-872. <https://doi.org/10.1111/josh.13192>
- Liu, H. , Luo, L. , & Tang, W. (2021). Kindergarten teachers' experiences of stress under a high-stake inspection regime: An exploration in the Chinese context. *International Journal of Educational Research*, 109, 101850. <https://doi.org/10.1016/j.ijer.2021.101850>
- Lizana, P. A. , & Lera, L. (2022). Depression, anxiety, and stress among teachers during the second COVID-19 wave. *International Journal of Environmental Research and Public Health*, 19(10), 5968. <https://doi.org/10.3390/ijerph19105968>
- Lourenço, V. P. , Pérez-Nebra, A. R. , Ferreira, A. I. , & Kohlsdorf, M. (2020). Relação entre presenteísmo, síndrome de burnout e liderança ética em organizações escolares [The relation between presentism, burnout syndrome and ethic leadership in scholar's organizations]. *Fractal: Revista De Psicologia*, 32(esp), 218-226. https://doi.org/10.22409/1984-0292/v32_i-esp/40568
- Mahan, P. L. , Mahan, M. P. , Park, N.-J. , Shelton, C. , Brown, K. C. , & Weaver, M. T. (2010). Work environment stressors, social support, anxiety, and depression among secondary school teachers. *AAOHN Journal*, 58(5), 197-205. <https://doi.org/10.1177/216507991005800504>
- Melo, Q. A. , Pinheiro, F. P. H. A. , Cunha, E. S. , & Melo, L. A. (2023). Construção e evidências de validação da escala de heteroavaliação dos estilos de liderança do diretor escolar [Construction and validation evidence of the hetero-assessment scale of school principal leadership styles]. [Manuscript submitted for publication]. Universidade Federal do Ceará.
- Mendes, A.M. , & Ferreira, M. C. (2008). Contexto de trabalho. Em M. M. M. Siqueira. (Org). *Medidas do comportamento organizacional: Ferramentas de diagnóstico e de gestão*. Porto Alegre: Artmed.
- Mérida-López, S. , Extremera, N. , & Rey, L. (2017). Emotion-regulation ability, role stress and teachers' mental health. *Occupational Medicine*, 67(7), 540-545. <https://doi.org/10.1093/occmed/kqx125>



- Mourão, L. , Faiad, C. , & Coelho Junior, F. A. (2016). Análise psicométrica da escala de heteroavaliação de estilos de liderança [Psychometric Analysis of the Leadership Styles Hetero-assessment Scale]. *Estudos de Psicologia (Natal)*, 21(3), 293–304. <https://doi.org/10.5935/1678-4669.20160028>
- Oliveira, A. C. P. de. , & Waldhelm, A. P. S. (2016). Liderança do diretor, clima escolar e desempenho dos alunos: Qual a relação? [Principal's leadership, school climate and student achievement: what is the relationship?]. *Ensaio: Avaliação e Políticas Públicas em Educação [online]*, 24(93), 824-844. <https://doi.org/10.1590/S0104-40362016000400003>
- Oliveira, D. A. (2010). Os trabalhadores da educação e a construção política da profissão docente no Brasil [Workers in education and political construction of the teaching profession in Brazil]. *Educar Em Revista*, 1, 17–35. <https://www.scielo.br/j/er/a/8KJhphGKx8FRDKFHWkN6Yhs/#>
- Oliveira, M. das G. M. de. , & Cardoso, C. L. (2011). Stress e trabalho docente na área de saúde [Stress and university teaching in the health sector]. *Estudos de Psicologia (Campinas) [online]*, 28(2), 135–141. <https://doi.org/10.1590/S0103-166X2011000200001>
- Othman, Z. , & Sivasubramaniam, V. (2019). Depression, anxiety, and stress among secondary school teachers in Klang, Malaysia. *International Medical Journal*, 26(2), 71-74. <https://core.ac.uk/download/pdf/227272881.pdf>
- Ouellette, R. R. , Frazier, S. L. , Shernoff, E. S. , Cappella, E. , Mehta, T. G. , Mariñez-Lora, A. , Cua, G. , & Atkins, M. S. (2018). Teacher job stress and satisfaction in urban schools: Disentangling individual, classroom, and organizational-level influences. *Behavior Therapy*, 49(4), 494-508. <https://doi.org/10.1016/j.beth.2017.11.011>
- Ozamiz-Etxebarria, N. , Santxo, N. B. , Mondragon, N. I. , & Santamaría, M. D. (2021). The psychological state of teachers during the COVID-19 crisis: The challenge of returning to face-to-face teaching. *Front. Psychol.*, 12, 620718. <https://doi.org/10.3389/fpsyg.2020.620718>
- Pessanha, F. N. de L. , & Trindade, R. A. C. (2022). La pandemia de Covid-19 y el precario desarrollo del trabajo docente en Brasil [The pandemic of Covid-19 and the precariousness of teaching work in Brazil]. *Actualidades Investigativas en Educación*, 22(2), 1-28. <https://doi.org/10.15517/aie.v22i2.48916>
- Raposo, M. C. F. , Cordeiro, G. M. , & Farias, M. L. da S. (2022). Como evoluíram os níveis de estresse e ansiedade em docentes e discentes universitários durante a pandemia da COVID-19? Um estudo transversal repetido [How did stress and anxiety levels evolve in university professors and students during the COVID-19 pandemic? A repeated cross-sectional study]. *Brazilian Journal of Development*, 8(5), 36122-36131. <https://doi.org/10.34117/bjdv8n5-2232>
- Ravalier, J. M. , & Walsh, J. (2018). Working conditions and stress in the English education system. *Occupational Medicine*, 68(2), 129–134, <https://doi.org/10.1093/occ-med/kqy017>

- Santos, J. da. C. , & Santos, M. L. da. C. (2005). Descrevendo o estresse [Describing stress]. *Revista Principia*, 1(12), 51-57. <https://periodicos.ifpb.edu.br/index.php/principia/article/viewFile/312/269>
- Ssenyonga, J. , & Hecker, T. (2021). Job perceptions contribute to stress among secondary school teachers in southwestern Uganda. *International Journal of Environmental Research and Public Health*, 18(5), 2315. <https://doi.org/10.3390/ijerph18052315>
- Tsubono, K. , & Ogawa, M. (2022). The analysis of main stressors among high-stress primary school teachers by job positions: A nationwide survey in Japan. *Frontiers in Public Health*, 10, 1-17. <https://doi.org/10.3389/fpubh.2022.990141>
- Vignola, R. C. B. , & Tucci, A. M. (2014). Adaptation and validation of the depression, anxiety and stress scale (DASS) to Brazilian Portuguese. *Journal of affective disorders*, 155, 104-109. <https://doi.org/10.1016/j.jad.2013.10.031>
- Zhao, W. , Liao, X. , Li, Q. , Jiang, W. , & Ding, W. (2021). The relationship between teacher job stress and burnout: A moderated mediation model. *Frontiers in Psychology*, 12, 1-9. <https://doi.org/10.3389/fpsyg.2021.784243>